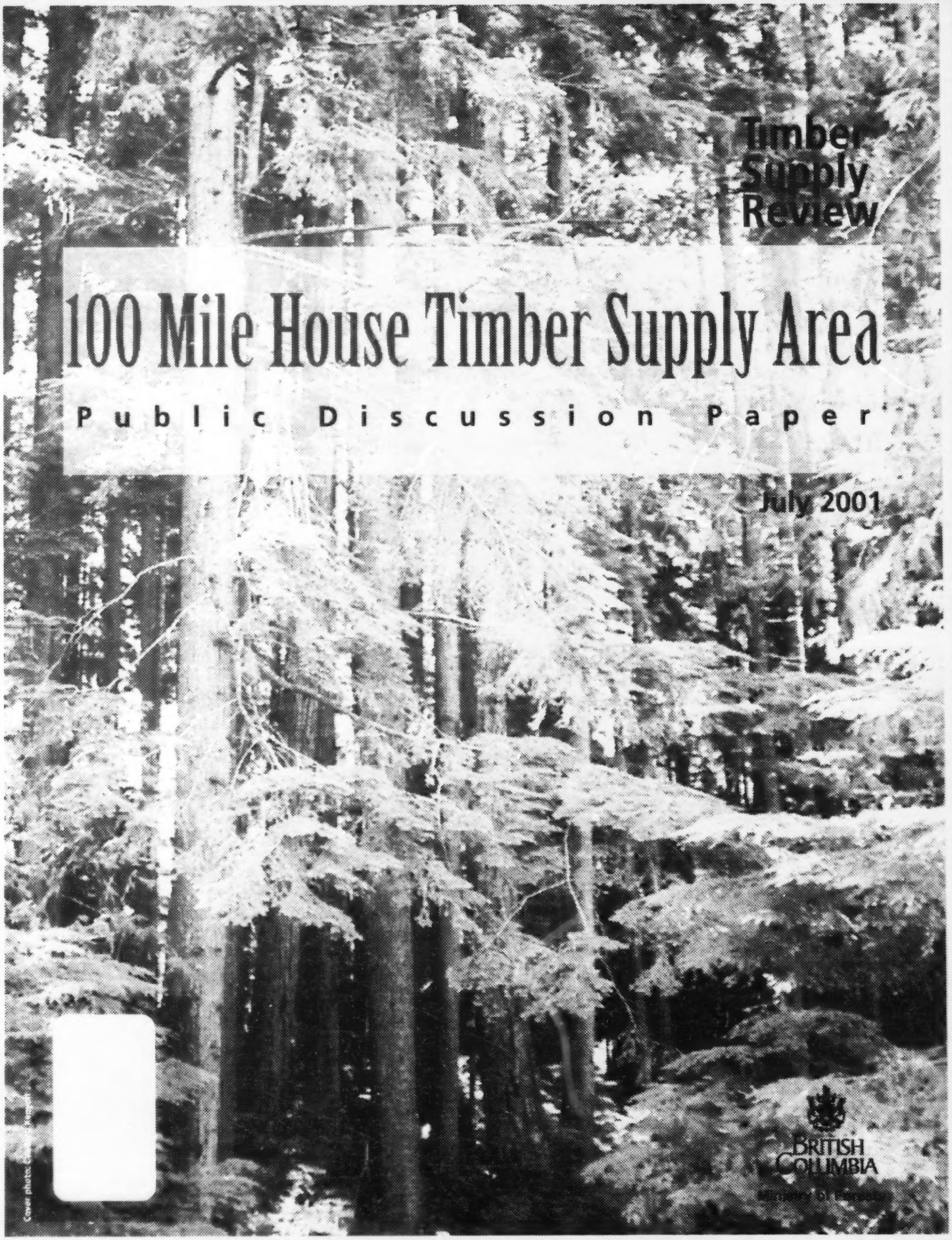
Timber Supply Review
100 Mile House Timber Supply Area
Public Discussion Paper
July 2001
BRITISH COLUMBIA

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Introduction

The British Columbia Forest Service is reviewing the timber supply for all timber supply areas (TSAs) and tree farm licences (TFLs) in the province. This review examines the impacts of current forest management practices on the timber supply, economy, environment and social conditions of the local area and the province. Based on this review, the chief forester may, if necessary, adjust the allowable annual cut (AAC) for the 100 Mile House TSA.

By law, the chief forester must review and set new AACs for all TSAs and TFLs every five years. The objectives of the Timber Supply Review are:

- to identify relevant current forest management practices and assess their effects on short- and long-term timber supply, and identify related economic, environmental and social factors
- to identify where improved information is required for future timber supply forecasts
- to provide the chief forester with information to use when making AAC determinations that will apply for the next five years

Timber Supply Review in the 100 Mile House TSA

The *100 Mile House TSA Data Package* and *Information Report* were released in May 1998. Following the release, the documents were reviewed by licensees, the public and government agencies. The B.C. Forest Service has now completed the *2001 100 Mile House TSA Analysis Report*, which is summarized in this discussion paper. The objectives of this document are to provide British Columbians with an overview of the Timber Supply Review process and harvest level forecasts for the 100 Mile House TSA and to encourage them to provide comments during the 45-day public review period. **Public comments will be accepted until August 20, 2001.**

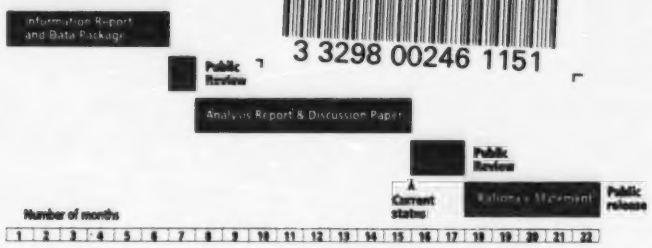
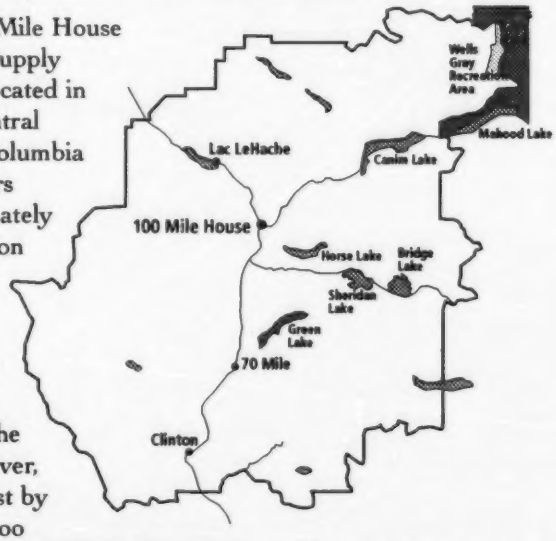

Information Report and Data Package
Public Review
Analysis Report & Discussion Paper
Public Review
A Current status
Rationale Statement
Public release
Number of months
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

Figure 1. *Review process for the 100 Mile House TSA*

Before setting a new AAC, the chief forester will review all relevant reports and public input. The chief forester's determination will be outlined in a rationale statement which, along with the summary of public input, will be available to the public upon release. Following the release of the AAC determination by the chief forester, the minister of forests will apportion the AAC to the various licences and programs.

Description of the TSA



The 100 Mile House Timber Supply Area is located in south-central British Columbia and covers approximately 1.23 million hectares. The TSA is bounded on the west by the Fraser River, on the east by the Cariboo Mountains and Wells Grey Park, on the north by the Williams Lake TSA, and on the south by the Kamloops TSA. The boundaries of the TSA are the same as those of the 100 Mile House Forest District, one of four districts in the Cariboo Forest Region. The TSA is administered by the forest district office in 100 Mile House.

** A timber supply area is an integrated resource management unit established in accordance with section 7 of the Forest Act.*

According to the 1996 census, the population of the 100 Mile House TSA is 15,893, an increase of 20 per cent since 1991. About 20 per cent of the population lives in the main communities of 100 Mile House (including 108 Mile Ranch) and Clinton. Other smaller communities include Lac la Hache, Forest Grove, 70 Mile, Lone Butte and Bridge Lake. The population is very dispersed throughout the TSA with many small rural settlements.

First Nations

Three First Nations have communities with a total population of about 1,100 located in the 100 Mile House TSA. All three—Tsq'escen (Canim Lake), High Bar and Xatl'tem/Stwecem'c (Canoe Creek) bands—are Secwepemc (Shuswap) people. Other First Nations with traditional territories in the 100 Mile House TSA are Williams Lake, Esketemc, Pavilion, Bonaparte, Whispering Pines, Skeetchestn and Chu Chua (North Thompson).

Traditional use studies have been completed by the Tsq'escen, Xatl'tem/Stwecem'c, Chu Chua, Bonaparte Band, Skeetchestn Band and Esketemc First Nation. These studies inventory information on traditional and contemporary land and resource use by First Nations.

An archaeological overview assessment was completed over most of the 100 Mile House TSA in 1998. This assessment indicates the relative potential for archaeological resources to be found, based on terrain features and anthropological factors, and is used to determine where on-the-ground archaeological impact assessments are to be carried out. The overview assessment will be extended in 2001 to cover the entire TSA.

The forest industry provides some employment opportunities to First Nations people. The Tsq'escen and Xatl'tem/Stwecem'c bands both hold woodlot licences. In addition, members of both bands are involved in logging and horse logging. A number of Tsq'escen band members also work as silviculture and logging contractors, and as forest fire fighters. Members of the Xatl'tem/Stwecem'c band are also involved in salvage logging and silviculture.

While there is general support for timber harvesting, First Nations leaders have expressed concern that their communities do not receive a fair share of resource revenues, and that aboriginal people are under-represented in the forest industry workforce. First Nations also have identified concerns with consultation on aboriginal interests, and with the impact of harvesting on resources and traditional activities. The Northern Secwepemc te Qelmucw (Cariboo Tribal Council, which includes the Tsq'escen and Xatl'tem/Stwecem'c bands) signed a memorandum of understanding with the BC Forest Service in 2000 that is intended to address these concerns.

The natural resources

The forests of the 100 Mile House TSA provide a wide range of natural resources, including forest products (timber and non-timber, such as botanical forest products), recreation and tourism amenities, and fishery and wildlife habitats. The grasslands and open forests in the TSA provide forage for the beef cattle ranching industry.

The topography of the TSA is characterized by gently rolling hills throughout most of the area, with higher mountains in the Marble Range to the southwest and the Quesnel Highlands to the northeast. The western part of the TSA along the Fraser River has a hot, dry climate, while the Cariboo Mountains in the east have a wetter climate and steep slopes. The central portion of the TSA is a relatively high elevation Interior plateau that is dry and flat.

Within the land base considered available for timber harvesting, lodgepole pine is the dominant species, while Douglas-fir, spruce, subalpine fir, western larch, western redcedar, western hemlock and hardwoods also occur. About 75 per cent of stands in the timber harvesting land base are at or above the minimum harvestable age, with an abundance of stands 100 to 120 years old and very few stands older than 250 years. Currently, about 83 per cent of productive forest, or 60 per cent of the total TSA land base, is considered available for harvesting under current management practices.

The forests and landscapes of the 100 Mile House TSA support a wide variety of wildlife, including mule deer, moose, eastern caribou, lynx, marten and owls, as well as many fish species. The Forest Practices Code outlines a process for identifying species at risk and designating wildlife habitat areas with specific management practices. Currently, 14 species identified as at risk may be found in the 100 Mile House Forest District, including grizzly bear, prairie falcon and bighorn sheep.

Residents and visitors make extensive use of the forests, parks and lakes of the TSA for recreational activities such as hiking, fishing, hunting, mountain

biking, backcountry recreation, wildlife viewing, snowmobiling and cross-country skiing. The area is well travelled, as it is extensively roaded and Highway 97, a major route to north-central B.C., runs through the TSA.

Environmental values

Current forest management follows the standards set out by the Forest Practices Code. These standards are designed to maintain a range of biodiversity and wildlife values. In the 100 Mile House TSA, about 18 per cent of the productive forest land is not considered available for timber harvesting and will provide for additional environmental values. Forested area both inside and outside the timber harvesting land base will help to maintain critical forest habitats for many species. Forest cover requirements for biodiversity, visual quality, community watersheds, recreation features, riparian management, and protection of unstable terrain were included in the analysis.

Land use planning

The Cariboo-Chilcotin Land Use Plan (CCLUP) was approved by government in October 1994 and included five new parks in the 100 Mile House TSA. In March 1995, the 90-Day Implementation Process Report was released, and effective Jan. 31, 1996 the targets and strategies relating to operational planning were declared as higher level plan direction under the Forest Practices Code. Government directed the Inter-Agency Management Committee, in consultation with the Regional Resources Board, to oversee implementation of the land-use plan. Both groups have endorsed the Final Report — CCLUP Integration Process, which is expected to provide direction to operational planning, as well as to further levels of planning such as sub-regional plans. The report also contains management strategies to meet the long- and short-term targets of the land-use plan. Any changes to the current management regime that occur before the AAC determination will be presented to the chief forester for his consideration in the determination.

A sub-regional planning process covering the entire 100 Mile House TSA is currently underway. This plan will further refine the implementation of the Cariboo-Chilcotin Land Use Plan targets and will provide additional direction to operational planning. Where they are used operationally, some of the draft results of this sub-regional process (e.g., non-timber resource inventories) have been incorporated in this timber supply review; others will be considered in future timber supply reviews in the 100 Mile House TSA.

Current allowable annual cut

The chief forester set the allowable annual cut (AAC) in the 100 Mile House TSA at 1.362 million cubic metres, effective Nov. 9, 1995. This maintained the previous AAC of 1.250 million cubic metres, plus a partition of 112,000 cubic metres from forest types suitable to meet the needs of Pulpwood Agreement 16.

Socio-economic profile

Regional economy

The economy of the 100 Mile House TSA is well diversified, with forestry, wood-related manufacturing and the public sector predominant. As Figure 2 shows, the forestry sector is the largest employer in the TSA, accounting for about 31 per cent of the labour force. Tourism has demonstrated significant growth in recent years, employing almost 1,300 people in the 100 Mile House TSA. Nearly 400 businesses in the TSA service visitors' needs. The agriculture sector is another important part of the local economy, employing about eight per cent of the labour force.

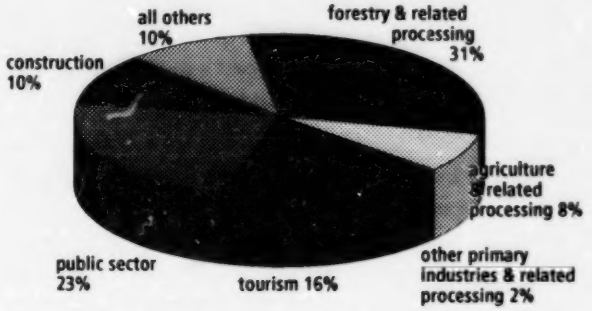


Figure 2. *100 Mile House TSA — Total Employment by Basic Sector, 1996*

Source: 1996 Forest District tables, BC Ministry of Finance and Corporate Relations

Notes: The figures are for the 100 Mile House TSA. Percentages reflect direct, indirect and induced employment supported by the basic sector. "Other" (basic sectors) consist of transportation and some manufacturing.

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The forest sector supports numerous other jobs in the area through companies and employees purchasing goods and services from local businesses. Each 100 full-time direct forestry jobs in the 100 Mile House TSA are estimated to support another 12 to 51 jobs, depending on the forestry activity (harvesting or timber processing). By comparison, 100 tourism jobs support an additional eight to 18 positions.

Table 1 illustrates the potential contribution of the forest industry associated with the 100 Mile House TSA timber harvest to both the regional and provincial economies. Figures in this table are based on the average 1997-1999 annual harvest of 1.297 million cubic metres.

	TSA	Provincial
Direct employment (person years)	725	1,106
Total employment (person years)	1,057	2,614
Total employment income ($1999 millions per year)	43.8	98.9
Provincial government revenues ($1999 millions per year)	n.a.	59.8

Table 1. *Summary of local and provincial economic information associated with the average 1997-1999 annual harvest.*

Timber supply forecasts

A timber supply computer model was used to project several possible timber supply forecasts for the next 250 years. One of these forecasts is the base case forecast that illustrates the effect of current forest management practices on timber supply. The base case is not an AAC recommendation, but rather one of many sources of information the chief forester will consider when setting the AAC.

The base case forecast is presented in this report for discussion and comparison. Due to areas of uncertainty, the AAC determined by the chief forester may be greater or less than the level forecast in the base case.

As Figure 3 shows, the base case harvest forecast for the 100 Mile House TSA indicates that a harvest level of 1,335,600 cubic metres per year—the current AAC adjusted to account for woodlot licences—can be maintained for 10 decades, followed by a four per cent reduction to the long-term harvest level of 1.282 million cubic metres per year. The existing partition of 112,000 cubic metres per year for Pulpwood Agreement 16 can be maintained for 20 years.

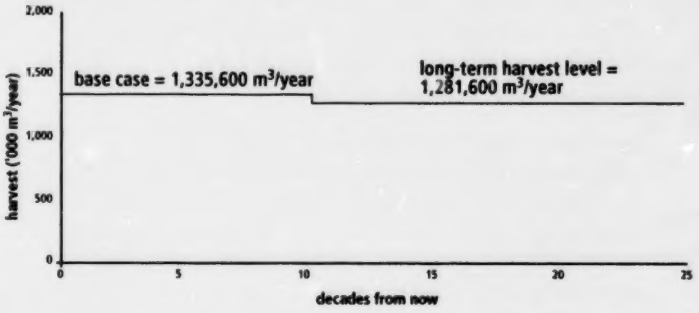

Figure 3. *Base case timber supply forecast—100 Mile House TSA, 2001*

Compared to the 1995 timber supply analysis, several changes have occurred in the 100 Mile House TSA that affect the base case timber supply forecast. Implementation of the Forest Practices Code has increased the land-base reductions for riparian areas and volume reductions for wildlife tree patches, while old-growth requirements have restricted timber availability. As well, practices under the Cariboo-Chilcotin Land Use Plan have been implemented, including revisions to scenic areas, lakes classification and wildlife features.

Sensitivity analyses: examining uncertainty

Because forests are complex and constantly changing, timber supply analysts assess how their timber supply forecast results might be affected by uncertainties in inventory information and management practices. These uncertainties are generally examined through what are called sensitivity analyses, which the chief forester will consider in determining an AAC. The sensitivity analyses are useful for assessing how any changes in information or uncertainties and risks might affect timber supply.

In the 100 Mile House TSA, a number of sensitivity analyses were conducted to examine the stability of the timber supply estimated in scenario one. Several key sensitivity analyses are described below. For a complete listing of sensitivity analyses, please refer to the *2001 100 Mile House TSA Analysis Report.*

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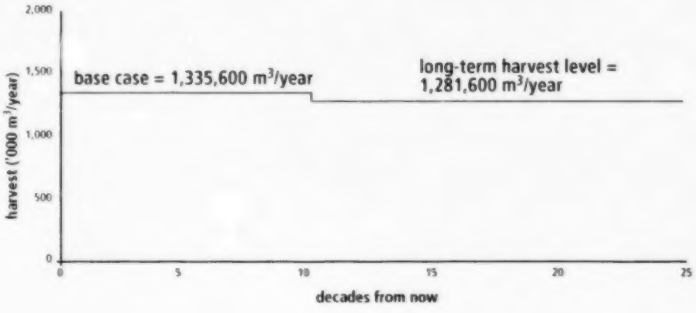

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Uncertainty about estimates of timber volumes in existing stands

Timber volume estimates for existing stands are subject to uncertainties in the forest inventory. An inventory audit showed that volumes may be overestimated by 11 per cent in the 100 Mile House TSA. A sensitivity analysis was performed to test the potential effect on timber supply of this uncertainty in volume estimates.

As Figure 4 shows, if all stand volumes in the TSA are decreased by 10 per cent, the base case harvest forecast can be maintained for two decades, then decline by 10 per cent to 1.199 million cubic metres per year for eight decades before returning to the same long-term level as the base case.

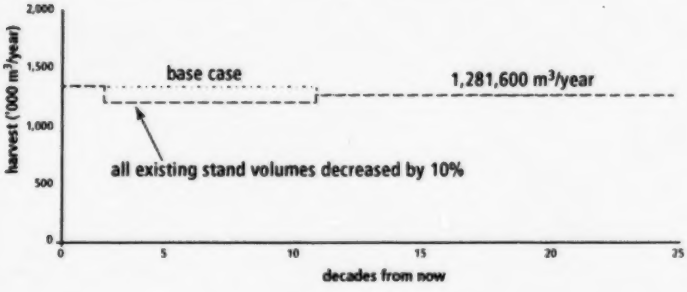

Figure 4. *Effects of uncertainty in estimated stand volumes—100 Mile House TSA, 2001*

Uncertainty about the size of the timber harvesting land base

Determining the size of the timber harvesting land base—after reflecting environmental objectives—involves complex considerations and projections about the future. For the 100 Mile House TSA, there is some uncertainty about the size of the timber harvesting land base due to factors such as the lack of localized data, land-use decisions and timber price fluctuations.

As Figure 5 shows, if the timber harvesting land base is 10 per cent smaller than in the base case forecast, there is still sufficient area in older existing stands to support the harvest for two decades. The harvest level then drops to medium- and long-term levels that are about 10 per cent lower than the base case. If the timber harvesting land base is 10 per cent larger than in the base case, the initial harvest level increases by nine per cent and is maintained for 10 decades before decreasing to a long-term harvest level about 10 per cent higher than the base case.

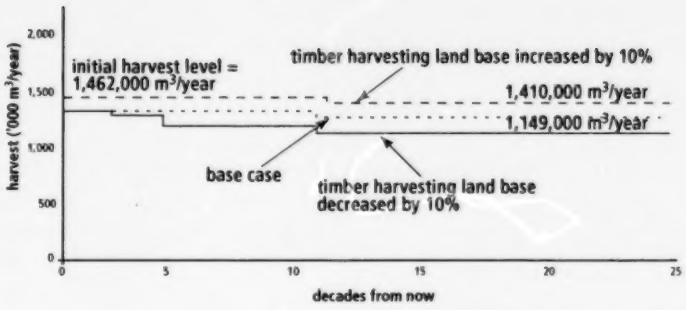

Figure 5. *Effects of uncertainty in the timber harvesting land base—100 Mile House TSA, 2001*

Innovative Forestry Practices Agreements

In June 1997, Lignum Ltd. obtained an Innovative Forestry Practices Agreement (IFPA) within the Cariboo Forest Region that covers a portion of the 100 Mile House TSA near its western boundary. The Forestry Plan that describes the boundaries of the agreement was signed in June 2000. IFPAs allow the holder to request an increase in the allowable annual cut associated with their replaceable licence. Based on additional management practices implemented under these agreements, the Forest Service regional manager may determine AAC increases for replaceable forest licences. The IFPA process is not part of the Timber Supply Review, in which the chief forester determines AACs for TSAs and TFLs. This discussion paper focuses on the Timber Supply Review process for the 100 Mile House TSA.

Implications of changes in the AAC

Community Implications

The implication of changes in the AAC for local communities is an important consideration in the Timber Supply Review. The base case harvest forecast for the 100 Mile House TSA suggests that a harvest level of 1,335,600 cubic metres per year could be maintained for 100 years. The average actual harvest level from 1997 through 1999 was about 1,297,290 cubic metres. If the base level is fully harvested and utilized, employment or other industry-related activities in the 100 Mile House TSA forestry sector could be marginally higher than the 1997-1999 average.

Your input is needed

Establishing the AAC is an important decision that requires informed and thoughtful public input. Feedback is welcomed on any aspect of this discussion paper, the *2001 100 Mile House TSA Analysis Report* and other issues related to the timber supply in the 100 Mile House TSA. Forest Service staff would be pleased to answer questions or discuss concerns that would help you prepare your response. Please send your comments to the forest district manager at the address below. **Your comments will be accepted until August 20, 2001.**

You may identify yourself on the response if you wish. If you do, you are reminded that responses will be subject to the *Freedom of Information and Protection of Privacy Act* and may be made public. If the responses are made public, personal identifiers will be removed before the responses are released.

A summary of public comments will be attached to the AAC rationale and will be available from the district office when the chief forester's AAC determination is announced.

For more information contact and/or mail your comments to:

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eric.johansen@gems9.gov.bc.ca

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Background Information Regarding TSR

The Chief Forester's Responsibility

Determining the allowable annual cuts for public forest lands in British Columbia is the responsibility of the province's chief forester. In this lengthy and complex process, the chief forester considers technical reports, analyses and public input, as well as government's social and economic objectives.

This responsibility is required by legislation in the Forest Act, Section 8. It states that the chief forester shall specifically consider the following factors:

1. The rate of timber production that may be sustained from the area, taking into account:
   - the composition of the forest and its expected rate of growth
   - the time that it will take the forest to become re-established
   - silviculture treatments, including reforestation
   - standards of timber utilization
   - constraints on the amount of timber that may be produced due to use of the forest for other purposes.
2. The short- and long-term implications to the province of alternative rates of timber harvesting from the area.
3. The nature, production capabilities and timber requirements of established and proposed processing facilities.
4. The economic and social objectives of the Crown for the area, region and province—as expressed by the minister of forests.
5. Abnormal insect or disease infestations, and major salvage programs planned for the timber on the area.

Some of these factors can be readily measured and analyzed—others cannot. Ultimately, the chief forester's determination is an independent professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not dictated to by the minister of forests when determining AACs. In these determinations, the chief forester considers relevant information from all sources.

Why the current AAC may be higher than the long-term harvest level

Some concern has been expressed that the AACs are higher than the long-term harvest level. One factor that explains this difference in the 100 Mile House TSA is that in the short term harvesting takes place in older forests that have accumulated high timber volumes by growing for a long time. Future harvesting on the same sites will take place in second-growth forests at younger ages, often yielding lower volumes per hectare.

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